

### Remarks

The above Amendments and these Remarks are in reply to the Office action mailed July 17, 2002.

Claims 1 – 32 and 34 – 37 are presented herewith for consideration.

### Objection to Abstract

A new ABSTRACT has been submitted herewith. It is respectfully submitted that the objection to the ABSTRACT is now moot.

### Objection To Claims 5 And 33 Under 37 C.F.R. §1.75(c)

Claims 5 and 33 are rejected under 37 C.F.R. §1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claim 33 has been cancelled. It is respectfully submitted that the limitations of claim 5 are not inherent in claim 4. Nothing in claim 4 requires transmission of the data between the first device and the server and the server and the second device at different points in time.

### Rejection Of Claim 14 Under 35 U.S.C. §112

Claim 14 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 has been amended to define “each” sync engine. It is respectfully submitted that the claim is sufficiently definite as now defined.

### Rejection Of Claims 1-37 Under 35 U.S.C. §103(a)

It is respectfully submitted that the invention as defined in claims 1-37 is not obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,742,792 to Yanai et al. (“Yanai”) in view of U.S. Patent No. 5,628,005 to Hurvig (“Hurvig”).

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**A. The Examiner Has Not Set Forth A *Prima Facie* Rejection.**

It is respectfully submitted that the Examiner has failed to provide a *prima facie* rejection under 35 U.S.C. §103. Specifically, the Examiner has not: (1) stated how the references expressly or impliedly suggest the claimed invention, or provided a convincing line or reasoning as to why the artisan would have found the claimed invention to have been obvious, nor (2) shown that the teaching to make the claimed combination would teach or suggest all of the claims. MPEP §706.02(j) provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). See MPEP § 2144 - § 2144.09 for examples of reasoning supporting obviousness rejections.

In particular, the Examiner has failed to set forth where the motivation exists to combine the references to make "...the invention to adapt *Hurvig*'s teaching onto *Yanai*". The alleged motivation, that "... *Hurvig* enables one to have a better data management by storing data in a network repository..." is not taught from the references. This is because *Yanai* is specifically concerned with mirroring data between elements, and no file management in the network access sense, as taught by *Hurvig*, is required.

Second, the rejection does not point to where particular limitations in the claims defining the invention are found in the prior art, nor explain how the clear differences in the teachings of the references relative to the limitations are to be applied to the claims.

*Yanai* presents a data mirroring system. Specifically, the patent teaches:

a system which provides a geographically remote mirrored data storage system which contains generally identical information to that stored on a primary data

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storage system. Utilizing such a system, data recovery after a disaster can be nearly instantaneous and may require little, if any, human intervention. Using the present system, the data is retrieved from a remote device through the host data processing system.... Col 7, lines 36 – 43.

The purpose of the system is to maintain identical data on two or more volumes.

*Hurvig* teaches a file access management system. In particular, it teaches a client server system coupled to a network communicating via a request/response transfer protocol and a mechanism for managing access to files directed for shared usage among the clients along the network which are stored at the server.

*Yanai* deals with mirroring of data volumes, not individual files:

Once the physical links are established between the primary and secondary data storage systems, and the user specifies which logical storage devices or volumes are to be remotely mirrored, appropriate microcode is loaded into the data storage systems. It is also possible that the primary and secondary logical volumes could also be configured for local mirroring for enhanced redundancy. Alternatively, local redundancy could employ techniques for distributing the data bits of each byte or word of data in a logical device or volume across a multiplicity of physical disk drives in various ways known as levels of RAID (redundant arrays of inexpensive disks). Col. 13, line 66 – Col. 14, line 11.

*Hurvig* deals with locking and releasing individual files. While a central storage server is employed on which the files are controlled, there is no reference to moving data between different computers other than allowing one or more clients access to a file on that central server. At most, the reference teaches a file control mechanism for a file on a server or in a network server environment.

If combined, the references teach, at most, a mechanism for controlling read and writes in a data-mirroring scheme.

**B. Even if Combined, The References Do Not Teach The Invention Defined In Independent Claims 1, 17, 25 and 31**

**1. Claims 1 - 16**

Even were the references to be combined, the combination would fail to provide:

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a first sync engine on ...[a] first system interfacing with data on the first system to provide difference information in a difference transaction;

a second sync engine on ...[a] second system coupled to receive the difference information in the difference transaction from ...[a] data store via the network, and interfacing with data on the second system to update said data on the second system with said difference information.

There is little discussion of the format for copying data transferred in *Yanai*. Data is discussed as being “copied”, “read” and “written”, and the use of RAID schemes is disclosed. However, there is no suggestion of the aforementioned: “first sync engine”, “second sync engine”, “difference information”, or “difference transaction” in *Yanai*. No combination of *Hurvig* with *Yanai* would present such structural elements.

At best, a combination of the references would provide a separate means (*Hurvig*) for controlling the mirroring process disclosed in *Yanai*. *Hurvig*’s network storage would be considered no more than another mirrored device, were one following the teachings of *Yanai*. Neither would provide the elements of the claim set forth above.

In the rejection of claims 14 and 27, the Examiner asserts that *Yanai* discloses a “difference transaction generator”. To the extent such assertion would be relevant to the invention as now defined in claim 1, it is respectfully asserted that those elements asserted by the Examiner as comprising a “difference transaction generator”, “...structures 32, 68, column 9, lines 39 – 44” (Office Action, Paragraph No. 1, Page 5) wholly fail to do so:

Indeed, the following two passages constitute the complete explanation of elements 32 and 68 in the text of *Yanai*:

...data director 32 which executes one or more sets of predetermined micro-code to control data transfer between the host 12, cache memory 28, and the storage device 20. Although the data director 32 is shown as a separate unit, either one of a channel adapter 26 or disk adapter 30 may be operative as a data director, to control the operation of a given data storage system controller... Col 8, lines 1 – 8.

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Also provided is a data director 68 which controls data transfer over communication bus 70 to which all the elements of the secondary data storage system controller are coupled. Col 9, lines 39 – 44.

The latter quote is that which is cited by the Examiner as supporting a teaching of a “transaction generator”. This quote and the accompanying reference is wholly devoid of any transaction generator. As understood, these elements control data transfer between the host cache and the storage device. Difference transactions are not disclosed as being used in such device.

Hence, one of average skill in the art would not be led by any combination of the references to construct the system of the present invention as defined in claim 1. Moreover, claims 2 – 16 dependent on claim 1 are likewise submitted to be not obvious. Reconsideration of such claims is hereby requested.

2. Claims 17 – 24

Similarly with respect to claim 17, any combination of the cited prior art would not teach one of average skill in the art the motivation or result of :

a first device including at least a first data file and first differencing code, the device having an input and an output coupled to a network to receive first device data change transactions from, and provide change transactions generated by the first differencing code based on said at least one data file to, said network;

a second system including at least a second data file and second differencing code, the device having an input and an output coupled to the network to receive said first device data change transactions from, and provide second change transactions generated by the second differencing code based on said at least second data file to said data store;

The arguments set forth above with respect to the combination of references with respect to claim 1 are likewise applicable here. The combination of references would not show the “first differencing code”, “second differencing code”, “first device data change transactions” or “second device data change transactions” all present in the claims prior to the amendment thereof. Moreover, the present amendment adds further clarification over the prior art, in that the claims now define “change transactions” which are “generated by the ... differencing code”.

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Hence it is respectfully submitted that claim 17, and claims 18 – 24 dependent therefrom, are likewise not obvious in view of the cited prior art. Reconsideration of such claims is hereby requested.

3. Claims 25 – 30

Further with respect to claim 25, it is respectfully submitted that no combination of the cited prior art would lead one of average skill in the art to provide a method including the steps of:

- determining difference data resulting from changes to the first file on the first system;
- generating a difference data transaction;
- transmitting the difference data to a server in the transaction via the Internet;
- querying ...[a] server from a second system to determine whether at least one difference data transaction exists for files on the second system;
- retrieving the difference data to the second system; and
- updating the second file on the second system with the difference data.

While the invention in claim 25 is characterized as a method, the teachings of the prior art still fail to demonstrate the steps set forth in claim 25 defining the invention. Once again, there is no teaching of the steps of “determining difference data”, “transmitting difference data” or “querying .. [a] server”. Moreover, the claim has been amended to include a further step of “generating a difference data transaction” and to specify that “transmitting the difference data” comprises transmitting the data “in the transaction”. Neither of these steps is demonstrated in the prior art.

Hence, it is respectfully submitted that the invention as defined in claim 25, and claims 26 – 30 dependent on claim 25, are not obvious in view of the cited prior art. Reconsideration of such claims is hereby requested.

4. Claims 31 - 37

Independent Claim 31, like claims 1 and 17, defines a system and includes limitations defining the invention which are not taught or suggested by the prior art, even were one to make the combination suggested by the Examiner. In particular, the prior art fails to teach the invention as defined by the limitations of claim 31 calling for:

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a first device coupled to the Internet and including a device sync engine including a difference transaction generator; and  
a second device coupled to the Internet and including a second device sync engine.

As with the invention defined in claim 1, there is no teaching or suggestion of a “first device sync engine” provided on a “first device” and a “second device engine” provided on a “second device”. In addition, as the claim is amended in this response, there is no teaching of the device sync engine “including a difference transaction generator”.

Hence, it is respectfully submitted that the invention as defined in claim 31, and claims 32 – 37 dependent on claim 31, are not obvious in view of the cited prior art.

Reconsideration of such claims is hereby requested.

**C. The Specific Rejection Of Claims 3, 18, 33, And 35 Are Not Supported By The Teachings Of The References**

Applicant specifically traverses the rejection of claims 3, 18, 33 and 35 as set forth in the Office Action.

Should the Examiner maintain the rejection of claims 1, 17, and 31 in light of the above arguments, it is respectfully submitted that the rejections of claims 3, 18, 33, and 35 are specifically not supported by the prior art. The Examiner sets forth the rejection of the claims in light of *Yanai* and *Hurvig*, and further in view of “official notice” wherein the Examiner asserts: “It has been well known to one in the computer art to use the Internet connection as a network connection. Users can access shared files of the Internet connection with or without the VPN”.

In addition to the arguments set forth above, the rejection of claims 3, 18, 33, and 35 does not meet the requisites for a *prima facie* rejection as the examiner has failed to “present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references” as required by MPEP 706.02(j). There is no suggestion why or how an

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Internet connection would be used in combination with the limitations of the invention in the independent claims or in the prior art to implement the invention defined in claims 3, 18, 33 and 35.

Moreover, the Examiner's reference to a VPN is not understood. It is neither mentioned in the claims nor in the references.

Still further, the relevance of this rejection to claim 35, calling for "data transfer between the first device, the second device and the storage server comprises difference transactions" is not understood. There is no explanation provided for the use of this art defined in the Official Notice with respect to this specific claim.

In addition, the rejection is specifically traversed under MPEP Section 2144.03: "The rationale supporting an obviousness rejection may be based on common knowledge in the art or 'well-known' prior art.... If the applicant traverses such an assertion the examiner should cite a reference in support of his or her position."

Applicant specifically traverses such assertion and citation of a reference is hereby requested.

Finally, even were this teaching coupled with the teachings of *Yanai* and *Hurvig*, the resulting combination would yield an internet coupled mirroring device, rather than a system including "device engines" or "transactions" as defined in the claims from which claims 3, 18, 33 and 35 depend.

Reconsideration of such claims is hereby requested.

**D. The Specific Rejection Of Claims 9-10, 22, 28, 29 Are Not Supported By The Teachings Of The References**

Applicant specifically traverses the rejection of claims 9-10, 22, 28, 29 as set forth in the Office Action.

It is respectfully submitted that the rejection of claims 9-10, 22, 28, 29 is not supported by the teachings of *Yanai* or *Hurvig*. In particular, the allegation the management server of *Hurvig* teaches

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locking access to information does not explain how one of average skill in the art would be led to adopt the teachings of Hurvig to use in *Yanai* – a mirroring system – to develop the system of the present invention. Even assuming that Hurvig's teachings are used with *Yanai*, the use of a management server with “device engines”, “transactions”, and “difference information”, and/or the steps of claim 25, from which claims 28 and 29 depend, is not taught in the cited prior art.

There is no teaching that would support use of the cited prior art file locking system to control access to the “difference information” (as opposed to the data files themselves) in the references.

Hence, reconsideration of such claims is hereby requested.

**E. The Specific Rejection Of Claims 11-12, 16, And 23 Are Not Supported By The Teachings Of The References**

Applicant specifically traverses the rejection of claims 11-12, 16, and 23 as set forth in the Office Action.

Again, the Examiner has failed to make out a *prima facie* rejection by failing to explain the relevance of the Official Notice to the claims or how one of average skill in the art would be led by such alleged prior art to the invention as defined in claims 11-12, 16, and 23.

As in the prior rejection, the examiner has taken official notice of certain prior art. Again, Applicant specifically traverses such assertion and citation of a reference is hereby requested.

Moreover, the examiner's reference to “clustering” is not understood in the context of the rejection. As understood, there is no relevance of such official notice to the claimed invention.

For the reasons set forth above with respect to claims 1, 17, and 15, and for the foregoing reasons, it is specifically submitted that claims 11-12, 16, and 23 are not obvious in view of the cited prior art.

Reconsideration of such claims is hereby requested.

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**F. The Specific Rejection Of Claims 13, 15, 34 And 36 Are Not Supported By The Teachings Of The References**

Applicant specifically traverses the rejection of claims 13, 15, 34 and 36 as set forth in the Office Action.

The Examiner takes official notice of a “fact” that “it is well known... to compress and encode the network communication data packets, ... are in a universal format... and independent from the data file’s associated application.” No explanation of the significance of this teaching relative to the claim limitations is provided.

Applicant specifically traverses such assertion and citation of a reference is hereby requested.

The use of “an encoded, universal format” as defined in claim 13 is not taught in conjunction with a difference transaction generator in the cited prior art. Even viewing the *Yanai* reference in the light most favorable to the Examiner’s assertions, there is no reason to convert the formats between the two systems therein, since the reference is concerned with *creating a mirror* of each device on the other. There is no need for a universal format as claimed, because the formats on the two devices are designed to be the same – such is the goal of mirroring schemes.

For the reasons set forth above, it is specifically submitted that claims 13, 15, 34 and 36 are not obvious in view of the cited prior art.

Reconsideration of such claims is hereby requested.

**G. The Specific Rejection Of Claims 14 And 27 Are Not Supported By The Teachings Of The References**

Applicant specifically traverses the rejection of claims 14 and 27 as set forth in the Office Action.

As noted above, the references do not teach the defined “difference transaction generator”. The portions of the reference referred to by the Examiner as teaching such element are devoid of any such

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teachings. No such teachings are present in the reference as a whole.

For the reasons set forth above, it is specifically submitted that claims 14 and 27 are not obvious in view of the cited prior art.

Reconsideration of such claims is hereby requested.

**H. The Specific Rejection Of Claims 24 And 37 Are Not Supported By The Teachings Of The References**

Applicant specifically traverses the rejection of claims 24 and 37 as set forth in the Office Action.

As understood, the Examiner is taking official notice of having “an application object to execute the operation and an application object store to buffer data” and the use of “a delta engine to filter data”.

Applicant specifically traverses such assertion and a reference is hereby requested. As defined in claim 17, dependent on claim 1, the use of “... an application object; an application object store; and a delta engine...” alone or in conjunction with the elements of claim 1 is not obvious. There are numerous methods for implementing the invention as defined in claim 1 and the specific use of the elements in claim 17 (and those in claim 37 to implement the system of claim 31) is not obvious in view of “well known” teachings.

Even combining the asserted “well known” aspects of the Examiner’s teachings, one would only have implemented an object-oriented mirroring system, not the system of claims 17 or 37 whose elements include those of claims 1 and 31, respectively.

For the reasons set forth above, it is specifically submitted that claims 17 or 37 are not obvious in view of the cited prior art.

Reconsideration of such claims is hereby requested.

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Based on the above amendments and these remarks, reconsideration of claims 1 – 32 and 34 – 37 is respectfully requested.

The Examiner's prompt attention to this matter is greatly appreciated. Should further questions remain, the Examiner is invited to contact the undersigned attorney by telephone.

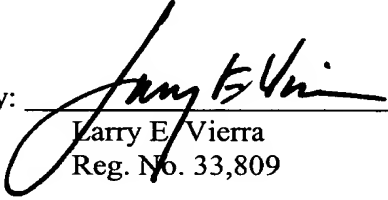
Enclosed is a PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. § 1.136 for extending the time to respond up to and including today, December 16, 2002.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: December 17, 2002

By: \_\_\_\_\_

  
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